REMARKS

This Amendment is in response to the Final Office Action mailed June 7, 2001. Claims 2-16 and 18-22 are pending in the application and have been rejected. Applicants respond to the rejection of claims 2-16 and 18-22 as follows.

Response to claim rejections - 35 U.S.C. § 102

Claims 2-4, 8, 11, 14 and 15 were finally rejected under 35 U.S.C. § 102(b) as being anticipated by Boutaghou, U.S. Patent No. 5,808,184. Claims 3 and 8 has been cancelled and claims 2, 4, 11, 14 and 15 have been amended and as amended, are patentable over Boutaghou. As amended claims 2, 4, 11, 14 and 15 recite *inter alia* a glide head including a glide body including a leading and trailing edge and a raised bearing portion including an elevated bearing surface **generally transverse** to the trailing edge and at least one thermal transducer formed on the elevated bearing surface which is not taught nor suggested by Boutaghou. Boutaghou does not teach or suggest a thermal transducer on a raised bearing surface generally transverse to a trailing edge surface of the slider body.

Typically, MR sensors are deposited using various fabrication techniques including thin film fabrication techniques on a trailing edge surface of a slider body. As discussed in Boutaghou, deposited sensors are very thin and as described, have a pitch length in the range of 0.5 to 3 microns. The pitch length of the sensor limits the contact area of the sensor along a pitch length of the head. As described in Applicants' specification, the narrow profile deposited on a trailing edge of the slider limits a glide interface area for detecting thermal asperities. The embodiment of the present invention provides for a large glide interface along the pitch angle or length of the head for defect detection over a larger range. For example, in a preferred embodiment, one or more thermal transducers cover an area of the air bearing surface from about 0.05 mm^2 to about 5.0 mm^2 to

increase the glide interface contact area for thermal asperity detection. Thus, the sensor of the present invention can provide for defect detection over a larger range of defect heights. Boutaghou does not teach or suggest the subject matter now claimed.

Response to claim rejections - 35 U.S.C. § 103

Claims 5-6, 9-10, 13, 16, 18-19 and 21 were rejected under 35 U.S.C. § 102(a) as being unpatentable over Boutaghou. Claims 5-6, 9-10 and 13 relate to a glide head and are dependent upon amended claim 2 which, as amended, are not taught nor suggested by Boutaghou as previously discussed. Claims 9-10 further recite a glide head including a transducer extending along at least half a length distance between the leading and trailing edge of the body of the glide head and claim 10 recites a glide head including a thermal transducer extending substantially between a leading and trailing edge of the glide body which is not taught nor suggested by the trailing edge transducers of Boutaghou. Claim 13 further recites a plurality of spaced thermal transducers and a plurality of conductive strips formed on a recessed bearing surface off-set from the raised bearing surface which is not taught nor suggested nor obvious in view of Boutaghou.

Claim 19 has been cancelled. Claim 16 recites a method of fabricating a glide head including *inter alia* fabricating an air bearing including a raised bearing surface and a recessed bearing surface and depositing a thermal transducer on the raised bearing surface. Claims 18 and 21 recite a method of fabricating a glide head comprising slicing a plurality of glide heads from a wafer and depositing thermal transducers on the plurality of glide heads sliced from the wafer. Claims 16, 18 and 21 as amended are not taught nor suggested by Boutaghou.

As described by Boutaghou, MR sensors are typically fabricated on a wafer level by known fabrication techniques prior

to fabrication of air bearing surface. (See Col. 3 of Boutaghou) Typically, slider bars are separated from the wafer to fabricate the air bearing surfaces after deposition of MR sensors at the wafer level, and then individual sliders are separated from the fabricated slider bar for glide test operation. Contrastingly, claim 16 recites fabricating an air bearing surface and depositing a thermal transducer on the fabricated surface which is not conventional or inherently taught by a wafer level fabrication of the sensor and bar level fabrication of the air bearing since the bar is sliced from the wafer to form the air bearing surface after fabrication of the sensor at the wafer level and thus conventional wafer fabrication processes do not teach nor suggest fabrication of an air bearing prior to sensor fabrication.

Claim 18 recites slicing a plurality of glide heads from the wafer and depositing the transducer on the plurality of glide heads sliced from the wafer which is not conventional nor inherently taught by the wafer level fabrication process of Boutaghou. Claim 21 is dependent upon amended claim 18 and further recites fabricating an air bearing on the plurality of glide heads sliced from the wafer prior to depositing the thermal transducers on the raised bearing surface which is not conventional and which is not inherently taught by Boutaghou.

Claims 20 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Boutaghou as applied to claims 2-6, 9-11, 18-19 and 21 in view of Nguyen, U.S. Patent No. 4,635,139. Claim 22 has been cancelled and claim 20 is dependent upon claim 16. As previously discussed, Boutaghou does not teach or suggest the subject matter of claim 16 nor does the further combination of Nguyen teach or suggest the subject matter of claim 16 nor dependent claim 20.

New claims 23-26 have been added for consideration. Favorable action is respectfully requested.

Any inquiry regarding this document may be directed to the

undersigned attorney of record at 612/330-0485.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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MARKED-UP VERSION OF REPLACEMENT CLAIMS

2.(Twice Amended) A glide head comprising:

~~an air bearing surface;~~

~~a trailing edge connecting the air bearing surface with a top surface~~a glide body including a leading edge, a trailing edge and a raised bearing portion including an elevated bearing surface generally transverse to the leading edge; and

~~a first~~ at least one thermal transducer that is ~~generally planar, the plane of the thermal transducer being oriented along the air bearing surface and the plane of the thermal transducer not being oriented along the trailing edge~~ formed on the elevated bearing surface to form a glide interface to detect asperities.

4.(Amended) The glide head of claim ~~3~~2 wherein the ~~contours include~~ raised bearing portion includes opposed side rails oriented along ~~the~~a length of the glide head and the at least one thermal transducer is formed along a portion of a length of at least one of the opposed side rails.

5.(Amended) The glide head of claim ~~3~~4 wherein ~~the thermal transducer is located on the contours~~each of the opposed side rails includes at least one thermal transducer.

6.(Amended) The glide head of claim 2 wherein the at least one thermal transducer is in electrical contact with electrically conductive pads ~~extending between the bottom surface and the top surface of the glide head~~proximate to the trailing edge of the glide body.

7. (Amended) The glide head of claim 6 ~~wherein~~including conductive strips conductively coupled to the at least one thermal transducer and the conductive pads to provide an electrical contact between the thermal transducer and the pads.

9. (Amended) The glide head of claim 2 wherein the at least one thermal transducer extends along at least half of ~~the~~a length distance between the ~~front edge of the glide head to the rear edge~~ leading edge and the trailing edge of the glide ~~head~~body.

10. (Amended) The glide head of claim 2 wherein the at least one thermal transducer extends substantially from the ~~front edge of the glide head to the rear edge~~ leading edge to the trailing edge of the glide ~~head~~body.

11. (Amended) The glide head of claim 2 ~~further~~and comprising ~~a second~~a plurality of thermal transducers.

12. (Amended) The glide head of claim 11 wherein ~~the~~a first thermal transducer and ~~the~~a second thermal transducer share a common electrical ground.

13. (Amended) The glide head of claim 11 wherein ~~the first thermal transducer and the second~~ the plurality of thermal transducers are ~~oriented along a contoured surface~~ spaced along the elevated bearing surface and the glide head further comprises electrically conductive strips in electrical contact with the plurality of thermal transducers, the strips being ~~located~~formed on ~~a plateau on the air bearing surface at a different level from the contour~~ a recessed bearing surface offset from the elevated bearing surface.

15. (Amended) The glide head of claim 2 in combination with ~~An~~an asperity detection system ~~comprising a glide head of claim 2~~.

16. (Thrice Amended) A method of ~~producing~~fabricating a glide head~~, the method~~ comprising:

fabricating an air bearing including a raised bearing surface and a recessed surface; and

depositing a ~~generally planar~~ thermal transducer ~~oriented along an air bearing surface of the glide head, wherein the deposition of the thermal transducer is performed onto the surface of a wafer prior to slicing a plurality of glide heads from the wafer~~on the raised bearing surface to form a glide interface to detect asperities.

18. (Twice Amended) A method of ~~producing a glide head, the method~~ fabricating a glide head from a wafer comprising;

slicing a plurality of glide heads from the wafer; and

depositing ~~a generally planar thermal transducer oriented along an air bearing surface of the glide head, wherein the deposition of the thermal transducer is performed onto the air bearing surface after the glide head is~~ thermal transducers on the plurality of glide heads sliced from ~~a~~the wafer.

21. (Amended) The method of claim 18 ~~wherein the air bearing surface is contoured~~ and further comprising:

fabricating an air bearing on the plurality of glide heads sliced from the wafer including a raised bearing surface and a recessed bearing surface prior to the deposition of the thermal transducers; and

depositing the thermal transducers on the raised bearing surfaces of the plurality of glide heads sliced from the wafer.